The Schmitt Program in Integrative Neuroscience (SPIN), in conjunction with the Ernst J. Del Monte Institute for Neuromedicine, announces the availability of Pilot and Feasibility awards (up to $50,000 per award) for basic science and translational projects that advance our understanding of both normal and abnormal brain functioning. The awarded funds are intended to enable new and established investigators to generate preliminary data that will lead to competitive applications for extramural funding. The SPIN program emphasizes interdisciplinary collaborative approaches to novel research questions, leveraging skillsets and techniques across research laboratories and traditional institutional boundaries. In 2016, SPIN will accomplish its goals through the support of new research projects in the neurosciences and neuromedicine broadly defined, from cognitive and systems to cellular and molecular approaches.

Areas of traditional concentration (1. Learning, Plasticity, and Memory; 2. Sensory Systems and Multisensory Integration Processes in Health and Disease and 3. The Neurobiology of Aging) will continue to be high priorities of the SPIN program, but exciting proposals from any branch of neuroscience will be given full consideration.

In addition, as part of the 2016 competition, additional funds have been made available in concert with a major initiative by the Institute for Neuromedicine to launch an Intellectual and Developmental Disabilities Research Center (IDDRC) at the University of Rochester. Special consideration will be given to projects that draw together interdisciplinary teams to advance the diagnosis, prevention, treatment, and amelioration of intellectual and developmental disabilities (IDD). Budgets up to $75,000 will be considered for projects that are responsive to this request. There are five specific focus areas under which such a project should fall. They are as follows, in no order of priority:

1. **Comprehensive –omic Approaches**

   Comprehensive –omic approaches (e.g., genomic, transcriptomic, epigenomic, metabolomic) that will markedly increase our understanding of IDD conditions with no known etiology or IDD conditions with complex etiologies to improve diagnosis, and potentially, treatment. Examples include, but are not limited to:
   
   - Whole exome or whole genome sequencing of a well-defined cohort of subjects with IDD to identify genetic or genomic variants likely to cause the phenotype;
   - Methylation or other studies on individuals with a shared IDD diagnosis but variable manifestations (such as range of cognitive function) to identify potential epigenetic contributors;
   - Tandem mass spectrometry on biological samples such as saliva, blood or urine from a group of individuals with metabolic or other disorders associated with intellectual disability that might define distinctive biomarkers or metabolic signatures that would allow monitoring of outcomes or response to treatment.

2. **Outcome Measures for Interventions or Treatments**

   Development of preclinical or clinical outcome measures or biomarkers for the cognitive and/or behavioral phenotypes of IDD that have the potential to demonstrate a change in response to intervention or treatment. Examples include, but are not limited to:
   
   - Development of a measure for an animal model (e.g., mouse, rat, nonhuman primate) of an IDD disorder that reliably detects changes in behavior response to a drug treatment;
• Development of a measure of cognitive function in individuals with an IDD condition that is sensitive to an intervention;
• Demonstration of changes in an existing behavioral measure in individuals with an IDD condition in response to therapy.

(3) Multi-modal Treatment Approaches

Development of bi- or multi-modal treatment approaches for a single IDD condition or a group of IDD conditions or spectrum disorders to demonstrate combinatorial effects to ameliorate a cognitive or behavioral symptom(s) of the condition(s). The interventions may or may not be disease-specific, and the potential to broaden to multiple IDD disorders is encouraged. Examples include, but are not limited to:

• Use of a drug and a training paradigm in an animal model of an IDD to demonstrate improvement in a behavioral measure;
• Use of a medication and behavioral treatment in combination for individuals with an IDD condition to demonstrate improved efficacy;
• Use of one well-established intervention plus 1-2 medications to improve general symptoms of a mood disorder in individuals with different IDD conditions who share that mood disorder.

(4) Shared Resources across IDDRCs for Treatment or Assessment

Development of an assessment battery or clinical intervention for an IDD condition or group of IDD conditions that links more than one funded IDDRC into a network, with sharing of at least one unique core resource from each IDDRC. Examples include, but are not limited to:

• Development of an assessment paradigm for an allelic series of animal models for an IDD condition that uses the genomics core of one IDDRC and the animal behavioral core of another IDDRC;
• Development of a testing paradigm for a specific IDD condition that uses the biostatistics core from one IDDRC and the human behavioral assessment core of another IDDRC;
• Creation of a clinical trial for an IDD condition that utilizes the patient recruitment core from one IDDRC and the trial design core from another IDDRC.

(5) Public Health Approaches

Public health approaches to IDD that identify potentially preventable, modifiable, or treatable targets that can yield a rich payoff in ameliorating or improving outcomes for large groups of individuals with IDD or that will reduce risk of developing an IDD. These may include pre-conceptional, prenatal, postnatal or childhood exposures or risk factors, and may involve the broader family or community. Examples include, but are not limited to:

• A project that addresses the risk of developing an IDD due to preterm birth;
• A project that addresses maternal exposures to potential teratogens (alcohol, cocaine, cytomegalovirus, etc.) that predispose to IDD;
• Development of a measure that attempts to reduce environmental factors (such as lead) that can contribute to IDD.

SPIN is supported by the Kilian J. and Caroline F. Schmitt Foundation. An internal review committee comprised of Drs. John Foxe (Director), Gary Paige (Grant Review Chair), Lizabeth Romanski, Tris Smith, Loisa Bennetto, William O’Neill, Harris Gelbard, and Greg DeAngelis will work with a panel of independent external reviewers to determine the most competitive projects for support. The Program is administered through the Del Monte Institute for Neuromedicine and the Department of Neuroscience.
SPIN Request for Applications, 2016

Application Process

Interdisciplinary Research Project Grants

The SPIN grant program supports interdisciplinary and collaborative research in the neurosciences. Applications may request up to $50,000, and in the case of IDDRC responsive proposals, up to $75,000. We anticipate awarding 4-6 grants this year. Principal investigators must be full-time tenure-track faculty members within the neuroscience/neuromedicine community at the University of Rochester.

Applications should be modeled after a short NIH research proposal (e.g. R03, R21), and should be submitted with the following:

- **Cover letter** with title, investigators, and description that indicates how the SPIN mechanism would extend research objectives across disciplines to build new directions and areas of expertise among the investigators.
- **Research description** (limited to 6 pages) including Specific Aims, Background and Significance, Preliminary Studies, Research Design and Methods.
- **Supporting materials** (Human Subjects, Vertebrate Animals, and Literature Cited) can follow on additional pages.
- **Budget** (detailed, not modular) with justification (faculty salary support is specifically excluded)
- **Bio-sketches** of all Co-Investigators and key personnel.
- **Other Support**
- **Resources and Environment**.

Review will emphasize:

- The interdisciplinary/collaborative character of the project (across faculty and laboratories)
- The significance and innovation of the proposed project
- The likelihood of a subsequently successful application for extramural support (e.g. new NIH RO1).

**Successful proposals should address all of these criteria**

Application Submission Deadlines

Please send applications by email as a single pdf file attachment to: Patricia_Thomson@URMC.ROCHESTER.EDU

Address all other questions about applications to: john_foxe@urmc.rochester.edu

The application deadline is 5:00 pm on Friday Feb 19th 2016.

Committee Review will be completed in roughly a month, with funding scheduled to begin in April.